



# PATENT SPECIFICATION

690,231

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**Index at Acceptance :—Class 52(i), V2.**

## COMPLETE SPECIFICATION.

### Improvements relating to Bedsteads.

We, J. NESBIT EVANS AND COMPANY LIMITED, a Registered British Company, of King Street, Wednesbury, Staffordshire, and DERMOT KNOX NESBIT EVANS and JAMES KNOX NESBIT EVANS, both British Subjects, of the Company's address, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement :—

This invention has reference to bedsteads which are particularly, although not exclusively, intended for use in hospitals or institutions and which are of the type provided, in addition to the normal legs, with one or more auxiliary legs fitted with castors or wheels adapted, by means of a manually operable mechanism, to be brought into or out of contact with the ground according to whether it is desired to wheel the bedstead about or that it remains stationary.

The object of the present invention is to provide very simple, inexpensive and smoothly operating mechanism for this purpose.

According to the present invention, a bedstead of the type referred to is provided with operating mechanism comprising a traversing screw and nut combination and a bell crank lever or rocker through which the motion of the nut is transmitted to an auxiliary leg, one end of the lever having a pin and slot connection with the nut, and the other end being directly or indirectly pivoted to the auxiliary leg.

According to an embodiment of the invention, the traversing screw has end bearings normally on a horizontal axis in a casing rigid with a vertical post on the foot end of the bedstead and one end of the screw extends beyond the casing and is fitted with an operating handle. The latter is arranged at the outside of the bedstead end so as to be readily accessible by nursing staff.

[Price 2s. 8d.]

A nut engaging the screw is provided with axial trunnions operatively engaged with a slotted bell crank lever or rocker angularly movable about a fixed axis on the casing.

This rocker or lever is also pivotally connected, either directly or indirectly through a link, with the upper end of an auxiliary wheeling leg slidably engaging the post.

When the handle is turned, the linear motion communicated to the nut by the screw transmits angular motion to the lever through the trunnion and slot connection and the pivotal connection of the lever to the auxiliary leg raises or lowers it as required. In a case where a pair of auxiliary wheeling legs are arranged to slide up and down in respective posts on an end of the bedstead, motion is transmitted by a single operating mechanism to a vertical sliding member to which the said legs are secured by a transverse member.

Under the invention, a smooth transmission, requiring but light effort of nursing staff, is ensured and the entire operating mechanism is compact.

Further features of the invention are incorporated in a satisfactory embodiment which will now be described in detail by way of example with reference to the accompanying drawing in which :—

Fig. 1 is a perspective view of the foot end of a bedstead with wheeling legs extended.

Fig. 2 is a vertical section of the operating mechanism incorporated in Fig. 1 and drawn to a larger scale.

Fig. 3 is a side view of Fig. 2 with the handle and cover removed.

Fig. 4 is an elevation of the screw and nut.

Fig. 5 is a perspective view of the rocker.

The bedstead 1 sufficient of which is shown for the purpose, has a foot end 2 having rest legs 3 and a pair of auxiliary wheeling legs 4 fitted with castors 5, which can be extended into ground engaging position as shown in Fig. 1 when the bedstead is required to be mobile. The legs 4 telescopically engage

tubular members 6 of the end 2 and are connected to a central tubular leg 7 which similarly engages a middle member 8. This central leg 7 can be extended and retracted in the member 8 by means of a mechanism housed in a casing 9 fast with the member 8, the casing having a removable cover 10.

The mechanism comprises a traversing screw 11, turnable in bearings 12 on a normally horizontal axis for traversing the nut 13, one end of the screw extending beyond the cover 10 and having a handle 14. A rocker 15 is pivoted about a fixed axis 16 of the casing 9 and interconnects the central leg 7 with the nut 13. As is more easily seen from Figs. 2—5, the nut 13 is provided with trunnions 17, set at right angles to its axis, which engage opposite rectilinear tracks 18 formed in one arm of a bell crank constituting the rocker 15. One of the tracks 18 is a slot while the other is a groove, the latter facilitating the engagement of the rocker with the trunnions in the somewhat confined space in the casing. The other arm of the rocker is connected at 19 to a link 20 coupled at 21 to the central leg 7.

The operation of the mechanism is very simple. When the handle 14 is turned, the linear motion communicated to the nut 13 by the screw 11 transmits angular motion to the rocker 15 through the trunnion 17 and slot connection 18 and the pivotal connection of the rocker 15 to the auxiliary leg 7 via the link 20 raises or lowers it as required.

In Fig. 2, the dotted line position of the rocker 15 and its connection to the leg 7 indicates the extended position of the latter under the traversing action of the nut 13 and the wheeling position as shown in Fig. 1.

In this example of the invention a pair of auxiliary wheeling legs 4 are arranged to slide up and down in their supports by motion transmitted through a single operating mechanism to a leg 7 coupling the legs 4 by transverse member. It would be readily understood that instead of providing a pair of wheeling legs a single central wheeling leg could be provided. If desired the rocker 15 may be pivotally connected to the upper end of the leg 7.

Under the invention, a smooth transmission, requiring but light effort of nursing staff, is ensured and the entire operating mechanism is compact.

The attainment of smooth and easy transmission for lifting and lowering the auxiliary leg or legs is an important advantage to be secured in minimising inconvenience to lying-in patients needing to be moved about a ward or from one ward to another.

What we claim is:—

1. A bedstead of the type referred to provided with an operating mechanism comprising a traversing screw and nut combination and a bell crank lever or rocker through which the motion of the nut is transmitted to an auxiliary leg, one end of the lever having a pin and slot connection with the nut, and the other end being directly or indirectly pivoted to the auxiliary leg.

2. A bedstead according to Claim 1 wherein the mechanism is arranged in a casing on the end of the bed and the screw is operated by means of a handle, accessible at the outside of the bedstead.

3. A bedstead according to Claim 2 wherein the rocker is provided with slots which engage trunnions on the nut, traversing motion of the nut through the screw serving to transmit angular motion to the rocker and thence to an auxiliary leg for lowering.

4. A bedstead according to Claim 3 wherein the rocker is connected to the leg through a link.

5. A hospital bedstead having auxiliary legs adapted to be extended and retracted by mechanism constructed and arranged substantially as described with reference to and as illustrated by the accompanying drawings.

Dated this 8th day of May, 1952.

For the Applicants,  
GEORGE FUERY & CO.,  
Chartered Patent Agents,  
Newhall Chambers,  
8, Newhall Street, Birmingham, 3.

## PROVISIONAL SPECIFICATION.

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this invention to be described in the following statement:—

This invention has reference to bedsteads which are particularly, although not exclusively, intended for use in hospitals or institutions and which are of the type 105

provided, in addition to the normal legs, with one or more auxiliary legs fitted with castors or wheels adapted by operating mechanism to be brought into or out of contact with the ground according to whether it is desired to wheel the bedstead about or that it remains stationary.

The object of the present invention is to provide very simple, inexpensive and smoothly operating mechanism for this purpose.

According to the present invention, a bedstead of the type referred to is provided with operating mechanism comprising a traversing screw and nut combination and a bell crank lever or rocker through which the motion of the nut is transmitted to an auxiliary leg, one end of the lever having a pin and slot connection with the nut, and the other end being directly or indirectly pivoted to the auxiliary leg.

According to an embodiment of the invention, the traversing screw has end bearings on a horizontal axis in a casing rigid with a vertical post on the foot end of the bedstead and one end of the screw extends beyond the casing and is fitted with an operating handle. The latter is arranged at the outside of the bedstead end so as to be readily accessible by nursing staff.

A nut engaging the screw is provided with co-axial trunnions operatively engaged with a slotted bell crank lever or rocker angularly movable about a fixed axis.

This rocker or lever is also pivotally connected, either directly or indirectly through a link, with the upper end of an auxiliary wheeling leg slidably engaging the post.

When the handle is turned, the linear

motion communicated to the nut by the screw transmits angular motion to the lever through the trunnion and slot connection and the pivotal connection of the lever to the auxiliary leg raises or lowers it as required. In a case where a pair of auxiliary wheeling legs are arranged to slide up and down in respective posts on an end of the bedstead, motion is transmitted by a single operating mechanism to a vertical sliding member to which the said legs are secured by a transverse member.

Under the invention, a smooth transmission, requiring but light effort of nursing staff, is ensured and the entire operating mechanism is compact.

The attainment of smooth and easy transmission for lifting and lowering the auxiliary leg or legs is an important advantage to be secured in minimising inconvenience to lying-in patients needing to be moved about a ward or from one ward to another.

A simple construction of a bell-crank lever consists of duplicate plates of approximately triangular form connected at the base by a lateral web. These plates are slotted or gapped vertically to receive the nut trunnions, are formed with registering holes for the fulcrum pin and are provided with matching lugs by which the lever is jointedly connected to the upper end of an auxiliary wheeling leg.

Dated this 9th day of May, 1951.

For the Applicants,  
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This drawing is a reproduction of  
the Original on a reduced scale.

Fig.1.

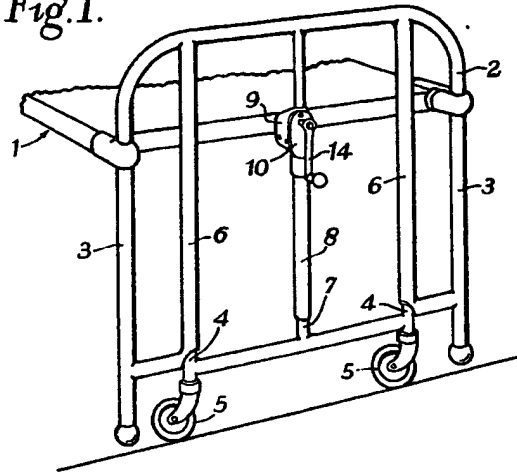


Fig.3.

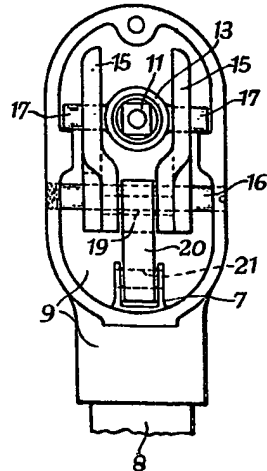


Fig.2.

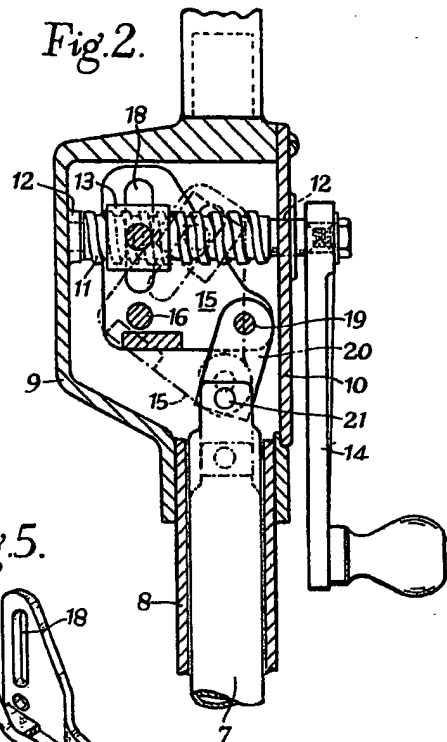


Fig.5.

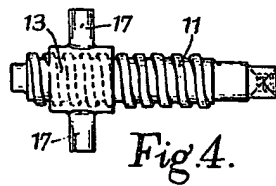
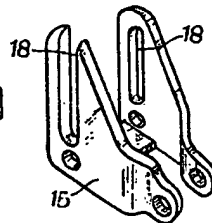


Fig.4.